Teachers Lead Shift to Next Generation Science Standards

Nearly 200 teachers gather to celebrate their work to transform science education in Delaware

Dover – During the past year, 95 of Delaware's leading teachers revised their lessons and teaching styles to give their students more opportunities to work like scientists: creating hypotheses, conducting experiments, thinking through the results, collaborating with other students and communicating their results. Over the course of the next 12 months, 110 more Delaware teachers will do the same as they join their colleagues as NextGen Teacher Leaders to implement new science standards in their schools.

On May 14, both groups of teachers will gather at a celebration in Dover of their contributions to implementing Next Generation Science Standards in their classrooms.

"These teachers are leading our state to where education must go if our students are to keep up with the demands they will face throughout their careers and have the wealth of choices for their futures that we all want for them," Secretary of Education Mark Murphy said. "I want to commend them on the terrific work they've been doing and will do for the students and for the state."

Delaware Helped Develop the Standards

Delaware was among 26 states that participated in the development of the Next Generation Science Standards, which emphasize inquiry, engineering design and understanding the broad concepts common to all scientific disciplines. The State Board of Education unanimously adopted the standards in September, 2013. (More about Delaware's involvement in the standards: Next Generation Science Standards website.) Eleven

other states and the District of Columbia also are using the standards, which are based on a framework written by the National Research Council.

“The hard part is what comes after adoption—making these NextGen standards come alive in our classrooms so that students benefit,” Gov. Jack Markell said. “That is the work that these teacher leaders are doing and I thank them for their leadership.”

The participating teachers were chosen by their districts to participate in the state-funded program. The first group of teachers met monthly starting in the summer of 2014 with science educators from the state Department of Education and several writers of the standards. They learned about the standards and the shifts in teaching required and developed new units, which they tried out in their classrooms and tweaked. During the 2015-2016 school year the first group of teachers will try out those revised lessons again and work on classroom assessments of the standards. Next summer, those teacher-developed materials will be available to teachers in all districts and schools that are part of the Delaware Science Coalition. The second group will follow the same pattern.

Building Capacity to Teach the Standards

“We have been deliberate and focused in how we’re implementing these standards, building the infrastructure and capacity for success through the NextGen Teacher Leader Program,” Michael Watson, the Chief Academic Officer for the Department of Education.

Keynote speaker at the event will be Dr. James Gates, Jr., a nationally famous University of Maryland physics professor who also serves on President Obama’s Council of Advisors on Science and Technology. He will discuss how the NGSS standards will help maintain the nation’s economic and scientific

competitiveness and prepare students for the jobs of the future. Dr. Gates is a well-known expert on supersymmetry, supergravity and superstring theory, and has garnered a large following as a regular presence on NOVA PBS programs on physics.

The NextGen Teacher Leader program has been well-received by teachers.

NextGen Creates Opportunities for Professional Growth for Teachers

“Through NGSS, I have had the opportunity to work with teachers across Delaware that I would have otherwise never had the opportunity to work with,” said Justin Malin, a fourth teacher at Clayton Elementary. “These teachers have brought with them an enthusiasm and insight into the teaching practices of science that will benefit all teachers and, ultimately, all students.”

Another teacher leader described the changes that have occurred in her class as a result of the curriculum she created. “My students collaborate when gathering evidence, and then they take that evidence and use it to make a reasonable claim,” said Cynthia Junge, a second grade teacher at South Dover Elementary. “Students are more confident because they have done the work. They like being in charge of their learning and being able to really apply the concepts that they are learning.”

Teagan Thomas, a 6th-grade science teacher at Las Americas ASPIRA Academy in Newark, said serving as a NextGen teacher leader was fulfilling helped her see herself as a leader. “I have not only learned how science education is evolving, but I have also learned about myself as a science educator,” she said. Thomas introduced NGSS to ASPIRA’s staff and helped them introduce scientific and engineering practices in their classrooms. “Working with my administration in regards to NGSS

has helped my leadership skills grow immensely. NexGen has changed me personally, opening my eyes to how science should be taught, explored and appreciated."

Delaware's Teacher of the Year, Megan Szabo, is a NextGen teacher leader as well. Szabo teaches middle school science at Postlethwait Middle School. "As a teacher it is my job to facilitate this learning and to help students push through times when they feel frustrated and unsure of themselves," she said. "I have learned that it is imperative that I do not do them the disservice of just giving them the answers, but instead teach them how to be analytical thinkers by providing them with the tools they need to be able to discover answers on their own."

Szabo's middle school students will speak at the May 14th about how the standards have affected their understanding of science as they transition from 7th to 8th grade.

The celebration marks the beginning of new year of collaboration and hard work by Delaware educators on the science standards and hearing from the students is an especially rewarding part of the process for educators. "The NextGen Teacher Leader program has taught me, challenged me and prepared me for more important work ahead," said Wendy Turner, a 2nd-grade teacher at Mt. Pleasant Elementary School. "I'm looking forward to it."